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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/858,387	05/15/2001	Donald C.D. Chang	PD-201006A	3432
20991 7590 10/28/2009 THE DIRECTV GROUP, INC. PATENT DOCKET ADMINISTRATION CA / LA1 / A109 2230 E. IMPERIAL HIGHWAY EL SEGUNDO, CA 90245				
EXAMINER TORRES, MARCOS L				
ART UNIT		PAPER NUMBER		
2617				
MAIL DATE		DELIVERY MODE		
10/28/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

09/858,387

**Applicant(s)**

CHANG ET AL.

**Examiner**

MARCOS L. TORRES

**Art Unit**

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7-22-09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. In view of the appeal brief filed on 7-22-09, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Lester Kincaid/

Supervisory Patent Examiner, Art Unit 2617.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-12, 14 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross US006556809B1 in view of Katz 6393303.

As to claim 1, Gross discloses a communications system (see fig. 1, item 100) for communicating with mobile user terminals (see fig. 1, item 130) comprising: a base station having an adaptive antenna with a plurality of beams having a different field of view [note: the term "field of view" can be interpreted in several ways such as pointing

field of view or coverage area field of view] (see fig. 1, item 140) having a plurality of main array antenna elements for simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals (see fig. 1, item 110; col. 4, 46-58; col. 5, lines 7-14, 38-51; col. 6, lines 3-24, 25-32; col. 9, lines 28-67; col. 10, lines 36-52; col. 11, lines 1-9; col. 12, lines 4-16); and a gateway station coupled to said base station, said gateway station forming a plurality of beams commands for each of the plurality of panel by communicating a plurality of control signals to the base station to form the plurality of dynamic communication beam (see fig. 1, item 120; col. 2, lines 56-61; col. 3, lines 55-63; col. 4, 46-58; col. 5, lines 7-14, 38-51; col. 6, lines 3-24, 25-32; col. 9, lines 28-67; col. 10, lines 36-52; col. 11, lines 1-9; col. 12, lines 4-16). Although is commonly known to use modular systems with the antenna by using panels, Gross does not specify using a plurality of panels. In an analogous art, Katz discloses a communication system using a plurality of panels with a different field of view (see col. 6, lines 50-63). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this teaching to the Gross apparatus for having a modular system with enhanced coverage.

As to claim 3, Gross discloses a communications system wherein said base station comprises a plurality of auxiliary elements for canceling interference between the pluralities of dynamic communication beams (see col. 4, lines 38-64).

As to claim 4, Gross discloses a communications system wherein said plurality of auxiliary elements is weighted to provide interference canceling (see col. 4, lines 38-64).

As to claim 5, Gross discloses a communications system wherein said gateway station is rf coupled to said base station (see col. 2, lines 62-63; fig. 1 item 110, 120, 122).

As to claim 6, Gross discloses a communications system wherein said base station is wireless (see col. 2, lines 62-63; fig. 1 item 110, 112, 122, 134).

As to claim 7, Gross discloses a communications system wherein said gateway station is positioned on a stratospheric platform (see col. 3, lines 55-63).

As to claim 8, Gross discloses a communications system wherein said adaptive antenna comprises a phased array antenna (see col. 4, lines 10-18).

As to claim 9, Gross does not specifically disclose the limitation of claim 9. Katz discloses a communications system as recited wherein said main array antenna elements are a modular using a plurality of panels with a same field of view [coverage area] (see fig. 1, 2, item 2; col. 6, lines 50-67; col. 7, lines 46- col. 8, line 7). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this teaching to the Gross apparatus for having a modular system with enhanced coverage.

As to claim 10, Gross discloses a communications system wherein said main array antenna elements comprise a plurality of modules coupled to a bus (see fig. 2, items 204,206,208,210,212 214, 202).

As to claim 11, Gross discloses a communications system as recited in claim 10 wherein said bus is coupled to a controller (see fig. 2, items 204,206,208,210,212 214, 202).

As to claim 12, Gross discloses a communications system further comprising a plurality of user terminals receiving said plurality of dynamic communication beams (see col. 2, lines 34-43).

As to claim 14, Gross discloses a communications system further comprising a nulling processor (see col. 4, lines 46-64; col. 8, lines 18-46).

As to claim 20, Gross discloses a communications system (see fig. 1, item 100) for communicating with mobile user terminals (see fig. 1, item 130) comprising: a plurality of wireless base stations with a plurality of beams having a different field of view [note: the term "field of view" can be interpreted in several ways such as pointing field of view or coverage area field of view] (see fig. 1, item 140) having adaptive antennas, having a plurality of main array antenna elements, simultaneously generating a plurality of dynamic communication beams that move with the mobile terminals (see fig. 1, item 110; col. 4, 46-58; col. 5, lines 7-14, 38-51; col. 6, lines 3-24, 25-32; col. 9, lines 28-67; col. 10, lines 36-52; col. 11, lines 1-9; col. 12, lines 4-16); a gateway station coupled to said plurality of wireless base stations through a plurality of multiple dynamic links, said gateway station forming a plurality of beams for each of the plurality of panels by communicating a plurality of a control signals to the base station to form the plurality of dynamic communication beams (see fig. 1, item 110; col. 4, 46-58; col. 5, lines 7-14, 38-51; col. 6, lines 3-24, 25-32; col. 9, lines 28-67; col. 10, lines 36-52; col. 11, lines 1-9; col. 12, lines 4-16) so that a user receives at least a first link from a first base station of the plurality of wireless base stations and a second link from a second base station of the plurality of wireless base stations (see col. 10, lines 8-36). In an analogous art, Katz

discloses a communication system using a plurality of panels with a different field of view (see col. 6, lines 50-63). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this teaching to the Gross apparatus for having a modular system with enhanced coverage.

Regarding claim 21 is the corresponding method claims of system claims 20. Therefore, claim 21 is rejected for the same reason shown above.

As to claim 22, Gross discloses a method further comprising canceling interference between said multiple dynamic links (see col. 3, lines 23-32).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Katz as applied to claim 1 above and further in view of Kasperkovitz (U.S. Patent 4,631,499).

As to claim 13, Gross and Katz do not specifically disclose a communication system further comprising a limiter coupled to a feedback path. In an analogous art, Kasperkovitz discloses a communication system further comprising a limiter coupled to a feedback path (see col. 7, lines 6-9). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this teaching to the modified Gross and Ward system for the simple purpose of controlling a device more efficiently.

7. Claims 15-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Katz as applied to claims 1 above, and further in view of Agee (U.S. Patent US006128276A).



As to claim 15-17 and 19, Gross discloses nulling and weighted feedback (see col. 4, lines 46-64; col. 8, lines 18-46). Gross and Katz do not specifically disclose a communication system further comprising a code despread. In an analogous art, Agee discloses a communication system further comprising a nulling processor further comprising a code despread and weighted feedback (see col. 23, lines 7-29; col. 11, lines 33-48). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this teaching to the modified Gross and Ward system for the simple purpose of enhanced quality of communication by rejecting interference.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Katz as applied to claim 1 above, and further in view of Janc (U.S. Patent 4,893,316) and further in view of Sayegh (U.S. Patent US006084541A).

As to claim 18, Gross discloses a communication system wherein said base station comprises a plurality of summing blocks coupled to the main array for generating a summed signal (see col. 4, lines 46-64) with a gateway station comprising an analog to digital converter (see col. 4, lines 10-17; col. 3, lines 55-63) and summed signal coupled to a digital beam forming circuit (see col. 4, lines 1-9, 18-27). Gross and Katz do not specifically disclose an A/D converter coupled to a noise injection circuit and the summed signal. Janc discloses a communication system comprising A/D converter coupled to a noise injection circuit and the summed signal (see col. 4, lines 18-28). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use this technique in to increase the reliability of the communication.

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Gross, Katz and Janc do not disclose the summed signal coupled to a demultiplexer. In an analogous art, Sayegh discloses a signal coupled to a demultiplexer (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use this technique in order to process the signal.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCOS L. TORRES whose telephone number is (571)272-7926. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-252-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marcos L Torres/  
Examiner, Art Unit 2617

/Lester Kincaid/  
Supervisory Patent Examiner, Art Unit 2617